

# FOLIA TAXONOMICA 7. TWO NEW SPECIES AND A NEW SECTION IN *EPISCIA* (GESNERIACEAE) FROM THE VENEZUELAN GUAYANA

Christian Feuillet

Department of Botany, MRC-166  
Smithsonian Institution, P.O. Box 37012  
Washington, D.C. 20013-7012, U.S.A.  
feuillet@si.edu

## ABSTRACT

Two new species of *Episcia* (Gesneriaceae) are described from the state of Amazonas in the Venezuelan Guayana. ***Episcia duidae*** sp. nov. resembles *E. reptans* in section *Episcia* by its flowers, but differs by its smaller vegetative parts and densely appressed-pubescent leaves. ***Episcia rubra*** sp. nov. resembles *E. fimbriata* and *E. sphalera* vegetatively, but differs by its red corollas. The latter three belong in subsection ***Trematanthera*** raised here to the rank of section.

## RÉSUMÉ

Deux espèces d'*Episcia* (Gesneriaceae) sont décrites de l'état d'Amazonas en Guyane Vénézuélienne. ***Episcia duidae*** ressemble par ses fleurs à *E. reptans* dans la section *Episcia*, mais en diffère par ses organes végétatifs plus petits et les trichomes foliaires denses et appliqués. ***Episcia rubra*** ressemble par ses caractères végétatifs à *E. fimbriata* et *E. sphalera*, mais en diffère par ses corolles rouges. Ces trois espèces appartiennent à la sous-section ***Trematanthera*** élevée ici au rang de section.

## RESUMEN

Se describen dos nuevas especies de *Episcia* (Gesneriaceae) del estado de Amazonas en la Guayana venezolana. ***Episcia duidae*** sp. nov. parece a *E. reptans* en la sección *Episcia* por sus flores, pero varía por sus partes vegetativas más pequeñas y hojas densamente aplicado-pubescentes. ***Episcia rubra*** sp. nov. parece a *E. fimbriata* y *E. sphalera* vegetativamente, pero varía por sus corolas rojas. Los últimos tres pertenecen a la subsección *Trematanthera*, que aquí elevamos al grado de sección.

The two new species of the subfamily Gesnerioideae Link described below were collected in the Venezuelan state of Amazonas. They belong to *Episcia* Mart. in the tribe Episcieae Endl. Since the regional treatment by Leeuwenberg (1958) and the formal infrageneric classification he proposed for *Episcia*, the genus has been split into four groups. Most authors now follow Wiehler (1973, 1978) in adopting *Alsobia* Hanst. and *Paradrymonia* Hanst., as well as the transfer of several *Episcia* species to *Nautilocalyx* Linden ex Hanst. The transfer to the other genera affected all the species of six of the seven sections and in section *Episcia*, three of the five subsections. The current concept of *Episcia* is the equivalent of two of the subsections of Leeuwenberg (1958), i.e. section *Episcia* subsections *Episcia* and *Trematanthera* Leeuwenb., and follows the most recent molecular studies (Smith 2000; Zimmer et al. 2003; Clark et al. 2006).

***Episcia*** Mart., Nova Gen. Sp. 3:39. Jan–Jun 1829. TYPE: *E. reptans* Mart. (LECTOTYPE: cf. Leeuwenberg, Gesner. Guiana 309. 1958).

### 1.—Sect. *Episcia*

Anther cells dehiscing throughout by a longitudinal split.

*Episcia reptans* (type), *E. andina* Wiehl., *E. cupreata* (Hook.) Hanst., *E. lilacina* Hanst., *E. prancei* Wiehl., *E. xantha* Leeuwenb. & *E. duidae* sp. nov.

***Episcia duidae*** Feuillet, sp. nov. (**Fig. 1**). TYPE: VENEZUELA. AMAZONAS. Dept. Alto Orinoco: Cerro Duida, Culebra Creek, 1500–1600 m, 21 Nov 1950 (fl), B. Maguire, R.S. Cowan & J.J. Wurdack 29634 (HOLOTYPE: US; ISOTYPE: NY).

Herba stolonibus, repens. Basis stolonum petiolique juniores trichomatibus rubris. Folia dense hirsuta praeter supra nervos medios et laterales; trichomata multicellulares, apice glandulosi. Calyx hirsutus, lobi integri, vel dentati. Corolla coccinea, tubus longe villosus.

Mat forming stoloniferous herb; whole plant with long, multicellular, gland-tipped trichomes, old stem with a few short trichomes (Berry et al. 4972) or 5–8 mm long, dense trichomes (Cowan & Wurdack 31288). Leaves



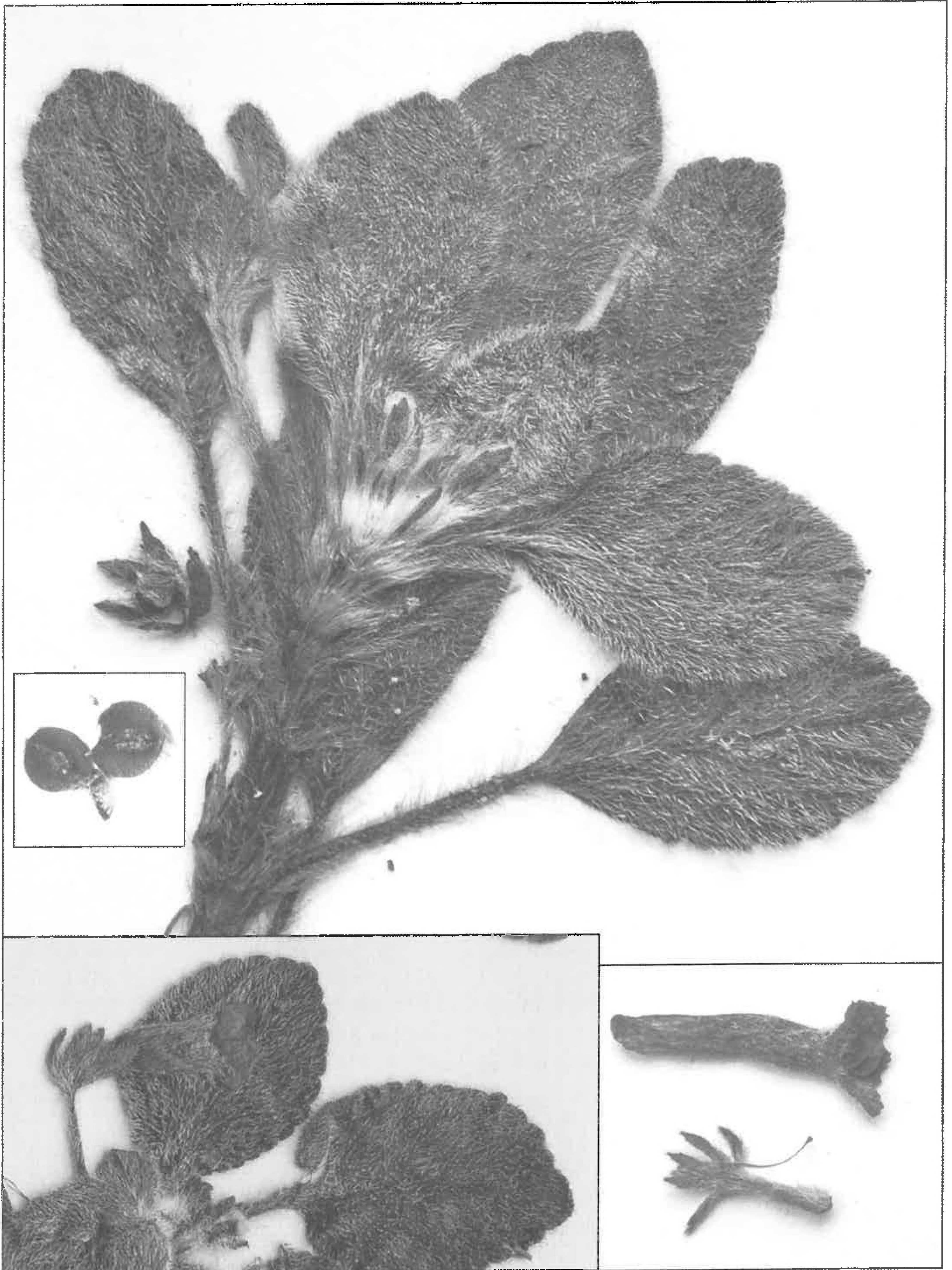


FIG. 1. *Episcia duidae* Feuillet. Plant, apex of growing stem showing young stolons (left), young leaves (low right leaf petiole 28 mm), and flower buds (middle), Cowan & Wurdack 31288 (NY); bottom left, older flower with open corolla (total corolla length 21 mm), Maguire *et al* 29634 (isotype: NY); bottom right, calyx with gynoecium and detached corolla (total corolla length 19 mm), Berry, Huber & Rosales 4972 (US); middle left, opened capsule (left valve 4.7 mm long), Cowan & Wurdack 31288 (NY).



opposite, equal or subequal in a pair, clearly larger in proximal part of the stem; petiole 0.5–3 cm long, hirsute, trichomes 2–2.5 mm long; blade carnose, suborbicular-ovate to broadly elliptic, 2–4.5 × 1.4–2.5 cm, base rounded to obtuse, apex rounded to broadly obtuse, margin crenate, with dense, long, appressed, yellow trichomes on both surfaces, except above on the main veins that show their dark green color, 3–5 main veins on each side of the midrib, ending in margin sinuses. Inflorescence a reduced pair-flowered cyme, fasciculate, 1–4-flowered, axillary in the apical part of the stem with small leaves still growing; pedicel about 8 mm long. Flowers with sepals free, entire or 1–2-toothed in apical half in the same flower, lanceolate to oblanceolate, 8–9 × 1.5 mm, densely hirsutulous on both sides, the posterior one slightly involute and narrower; corolla held transversal in the calyx, crimson, basal gibbosity 3 × 4 mm, uniformly densely pilose, tube 15–18 mm long, densely appressed-pubescent outside, inside papillate in apical third and glabrous below, lobes suborbicular, rounded, serrulate, 7 × 4 mm, glabrous on both sides except at very base where joining the tube; stamens inserted about 2.5 mm above base of corolla tube, filament glabrous, broadened at base, anthers suborbicular, 1.5 × 1.2–1.5 mm; dorsal glands fused in a tongue-like gland, about 1 × 1 mm; ovary superior, ovoid, 3 × 3 mm, densely sericeous-pilose, style 12 mm long, densely pilose. Capsule globose, 4.5–5 mm long.

*Distribution*.—*Episcia duidae* is known from Cerro Duida (Munic. Alto Orinoco) and Serranía Parú (Munic. Atures) in the state of Amazonas (Venezuela) between 1500 and 2000 m. It was collected at the bases of waterfalls and in wet crevices.

*Phenology*.—It has been collected in bloom in February–March and November, and in fruit in February.

*Episcia duidae* resembles the red-flowered species of subsection *Episcia*: *E. andina* Wiehl., *E. cupreata* (Hook.) Hanst., and *E. reptans* Mart. Inside the corolla tube, *E. duidae* has the apical third with large papillae, *E. cupreata* and *E. reptans* have a ring of glandular trichomes in the throat, *E. andina* is said to have a corolla glabrous inside (Wiehler 1984; but this could not be checked). The style is densely pilose in *E. duidae*, unknown in *E. andina*, and glabrous in the other two, occasionally with scattered trichomes at the apex in *E. cupreata*. *Episcia duidae* and *E. andina* differ from the other two by much smaller leaf blades with a long dense appressed pubescence on both sides rather than hirsute leaf blades found in the other two species. The corolla of *E. reptans* is about twice as long as in the other three; it is cylindrical and nearly straight in *E. duidae* and *E. reptans*, infundibuliform and straight in *E. andina*, and clearly curved in the middle in *E. cupreata*. *E. duidae* differs from *E. cupreata* by the dense appressed (versus hirsute) indumentum on the leaf blades, the corolla posture transverse (versus oblique) in the calyx, with a tube straight (versus curved near middle), densely appressed-pubescent (versus pilose), smaller corolla lobes, and a style densely pilose (versus glabrous or with a few trichomes near the apex). *Episcia duidae* was “sp. B” in Feuillet and Steyermark (1999), where it should be noted that numbers 2 and 3 were switched in the first bracket of the “Key to the species of *Episcia*” in that publication.

*Etymology*.—The new species is named after Mt. Duida at the base of which the type specimens have been collected.

PARATYPES: VENEZUELA. AMAZONAS. Dept. Atures: Serranía Parú, 2000 m, 7 Feb 1951, R.S. Cowan & J.J. Wurdack 31288 (NY), 1200–1250 m, 5–7 Mar 1991, P.E. Berry, O. Huber & J. Rosales 4972 (MO, US).

**2.—Sect. Trematanthera** (Leeuwenb.) Feuillet, sect. nov. BASIONYM: *Episcia* subsect. *trematanthera* Leeuwenb., *Blumea* 7:309–310. 1958.

Anther cells dehiscing only on the basal half by a partial split.

*Episcia sphaera* Leeuwenb. (type), *E. fimbriata* Fritsch & *E. rubra* sp. nov.

***Episcia rubra*** Feuillet, sp. nov. (**Fig. 2**). TYPE: VENEZUELA. AMAZONAS. Dept. Atures: Río Coro-Coro, W of Serranía de Yutajé, 3 km N of settlement of Yutajé, along a small tributary, 5°38'N, 66°07'W, 200 m, 19 Feb 1987, B.K. Holst & R.L. Liesner 3087 (HOLOTYPE: US-3120092; ISOTYPES: MO, US-3284218).

Herba stolonibus; caules repentes, dense hirsuti; lamina foliorum bullata, hirsuta; calyx hirsutus; corolla coccinea.



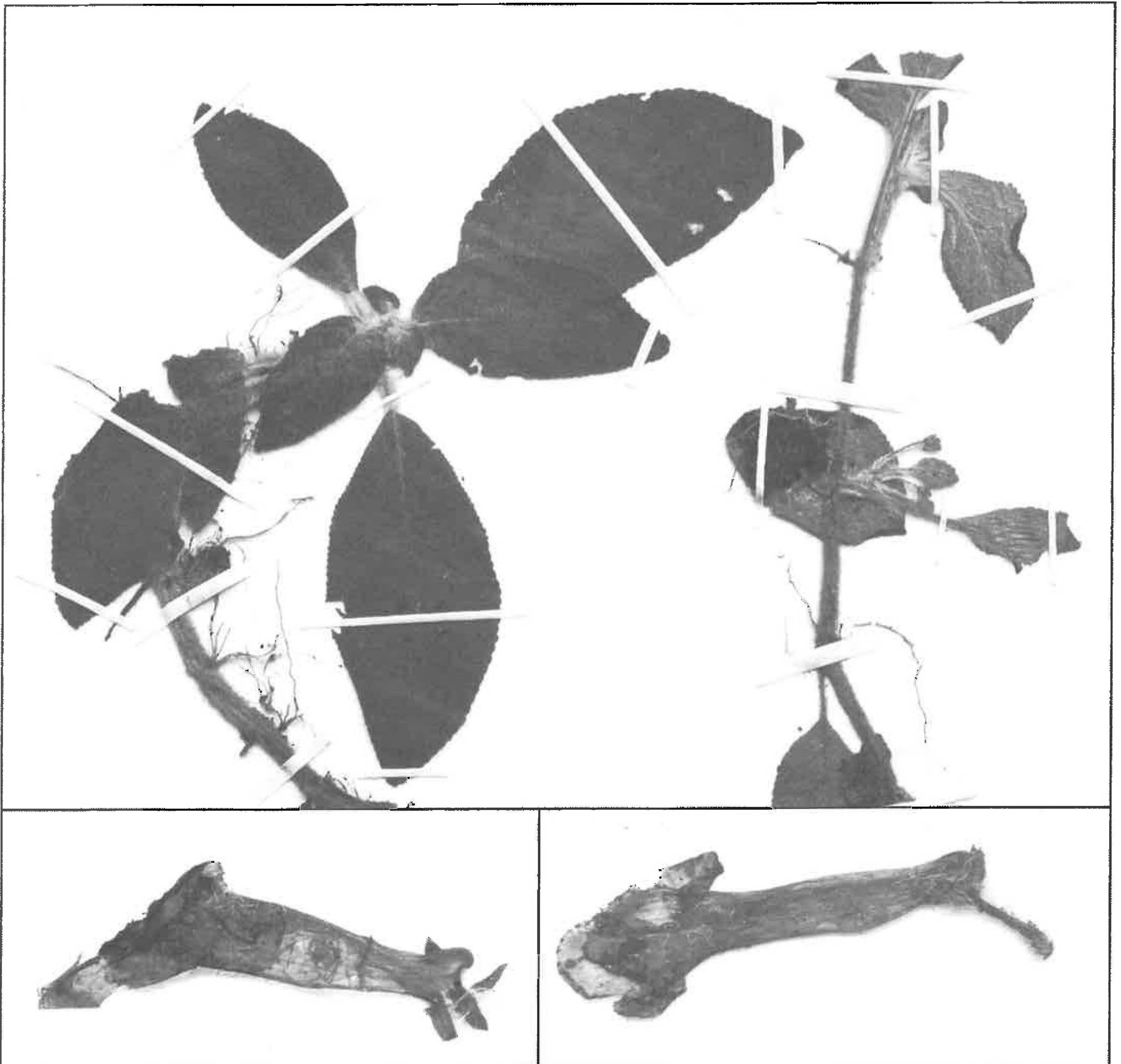


FIG. 2. *Episcia rubra* Feuillet. Plant: top (low middle leaf blade 83 mm long), *Holst & Liesner 3087* (holotype: US). Flower bottom left (total corolla length 21 mm), *id.* (isotype: US), bottom right (total corolla length 25 mm), *id.* (isotype: MO).

Herb terrestrial, creeping with short stolons; stem with long, multicellular, fuzzy, dense, yellowish trichomes. Leaves opposite, equal or subequal in a pair, clearly larger in proximal part of the stem; petiole 0.5–2.5 cm long, trichomes longer than on the stem; blade 2.5–9 × 1.5–4.5 cm, ovate to elliptic, base acute to obtuse, apex obtuse, margin crenate, ciliate with a tuft of trichomes at apex of each tooth, above pebbled, with trichomes at apex of each of the bullae, beneath with dense, long, silvery indumentum, 6–9 main veins on each side of the midrib. Inflorescence a reduced pair-flowered cyme, fasciculate, 1–4-flowered, axillary in the apical part of the stem with small leaves still growing; pedicels 8–1.5 mm long, hirsute, with long, fuzzy, dense, yellowish trichomes. Flower: sepals free, oblanceolate, 2–3.5 × 1 mm, apex acute, tip and 1–2 teeth thickened, hirsute, trichomes 1.8–2.3 mm long, fuzzy, dense, yellowish; corolla oblique in the calyx, crimson, basal gibbosity 1.5–2 mm long, conical, rounded distally, tube 1.2–1.6 cm long, outside with scattered, 1 mm long trichomes, lobes suborbicular, 3 × 4 mm, serrulate; stamens inserted 2–3 mm from the base of the tube, filaments 9–12 mm long, anthers reniform, about 1 × 1 mm, cells divergent, dehiscence wide at base, narrow then absent toward apex; nectary comprised of one dorsal tongue-shaped gland, 0.8



× 0.5 mm; ovary superior, ovoid, 2.5 × 1.5 mm, hirsute, trichomes 1.5–2 mm long, style 15 mm long, glabrous, stigma papillose. Young fruit subspherical, 3.5 mm in diameter, hirsute with yellowish trichomes, 1–1.5 mm long.

*Distribution and phenology.*—*Episcia rubra* is known only from the type collection from crevices in moist, shaded, rocky canyon along a tributary of Río Coro-Coro, in Amazonas, Venezuela, around 200 m in elevation. It was blooming and had young fruits in February.

The anthers dehiscent only in the basal half place *Episcia rubra* in sect. *Trematanthera* with *E. fimbriata* Fritsch and *E. sphalera* Leeuwenb. among which it differs by its red corollas.

*Etymology.*—The new species is named after the color of its red corolla, unique in *Episcia* sect. *Trematanthera*.

#### KEY TO THE SPECIES OF EPISCIA FROM THE GUIANA SHIELD

1. Corolla red or red-orange.
  2. Petiole of mature leaves 30–70 mm long; corolla 20–35 mm long.
    3. Corolla tube cylindric, 3–3.5 cm long, nearly straight, pinkish in the throat, all 5 lobes spreading. Colombia, Venezuela (western and Amazonas, Bolivar), French Guiana, Guyana, Surinam, Brazil (Minas Gerais and northern), Peru \_\_\_\_\_ **E. reptans**
    3. Corolla tube ampliate to twice as wide at throat than at base, ≤ 2.5 cm long, and suddenly curved at middle, yellow in the throat, 2 dorsal lobes recurved. Central America, Colombia, Venezuela (western), Brazil (Amapá), Ecuador, Peru + Guianas (cultivated, sometimes escaped) \_\_\_\_\_ **E. cupreata**
  2. Petiole of mature leaves 10–30 mm long; corolla tube 12–18 mm long.
    3. Calyx lobes 7–8 mm long; corolla tube densely appressed-pubescent; anther cells opening by a longitudinal slit from base to apex. Venezuela (Amazonas) \_\_\_\_\_ **E. duidae**
    3. Calyx lobes 2–3 mm long; corolla tube sparsely hirsute; anther cells dehiscing only on their basal half. Venezuela (Amazonas) \_\_\_\_\_ **E. rubra**
1. Corolla yellow, white, or lavender to light blue.
  4. Corolla yellow; calyx lobes obovate. Venezuela (Amazonas), Guyana, Surinam, French Guiana \_\_\_\_\_ **E. xantha**
  4. Corolla tube white, lobes white or lavender; calyx lobes lanceolate or spatulate.
    5. Corolla lobes white; leaf blades pale green; calyx lobes lanceolate. Brazil (Amapá, Pará), Surinam, French Guiana \_\_\_\_\_ **E. sphalera**
    5. Corolla with lavender markings or lobes lavender to blue; leaf blades variously colored; calyx lobes lanceolate or spatulate.
      6. Corolla white with lobes lavender to blue; calyx lobes spatulate; leaf blades mostly with color markings; anther cells opening by a longitudinal slit from base to apex. Central America, Colombia + Guianas (cultivated, rarely escaped) \_\_\_\_\_ **E. lilacina**
      6. Corolla white, sometimes with lavender markings; calyx lobes lanceolate; leaf blades mostly green, sometimes margin red beneath; anther cells dehiscing only on their basal half. Colombia, Venezuela (Amazonas), Brazil (western and northern), Peru \_\_\_\_\_ **E. fimbriata**

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